

WHAT IS CLAIMED IS:

1. A surface acoustic wave (SAW) device, comprising:
a piezoelectric substrate;
a conductive layer located over said piezoelectric substrate;
and
a resistive layer, interposing a portion of said conductive layer and said piezoelectric substrate, that forms a return path for static charge migrating from said piezoelectric substrate to said conductive layer.

2. The SAW device as recited in Claim 1 wherein said piezoelectric substrate comprises one selected from the group consisting of:

bismuth germanium oxide,
gallium arsenide,
lithium borate,
lithium niobate,
lithium tantalate,
langasite,
lead zirconium tantalate, and
quartz.

3. The SAW device as recited in Claim 1 wherein said
2 conductive layer comprises one selected from the group consisting
3 of:

4 aluminum,
5 copper,
6 gold,
7 silver,
8 platinum, and
9 palladium.

4. The SAW device as recited in Claim 1 wherein said
2 resistive layer comprises one selected from the group consisting
3 of:

4 silicon,
5 titanium,
6 zirconium,
7 hafnium,
8 vanadium,
9 niobium,
10 tantalum,
11 molybdenum,
12 tungsten,
13 chromium,

14 nitrides thereof, and
15 carbides thereof.

5. The SAW device as recited in Claim 1 wherein said
2 resistive layer couples a selected signal pad to one of a plurality
3 of ground pads.

6. The SAW device as recited in Claim 1 wherein said
2 resistive layer is interposed between an entirety of a pad portion
3 of said conductive layer and said piezoelectric substrate.

7. The SAW device as recited in Claim 1 wherein said SAW
2 device comprises two signal pads and four ground pads and said
3 resistive layer is divided into portions that span said two signal
4 pads and said four ground pads.

8. A method of manufacturing a surface acoustic wave (SAW) device, comprising:

providing a piezoelectric substrate;

forming a conductive layer over said piezoelectric substrate;

and

creating a resistive layer between a portion of said conductive layer and said piezoelectric substrate, said resistive layer forming a return path for static charge migrating from said piezoelectric substrate to said conductive layer.

9. The method as recited in Claim 8 wherein said piezoelectric substrate comprises one selected from the group consisting of:

bismuth germanium oxide,

gallium arsenide,

lithium borate,

lithium niobate,

lithium tantalate,

langasite,

lead zirconium tantalate, and

quartz.

10. The method as recited in Claim 8 wherein said conductive layer comprises one selected from the group consisting of:

aluminum,
copper,
gold,
silver,
platinum, and
palladium.

11. The method as recited in Claim 8 wherein said resistive layer comprises one selected from the group consisting of:

silicon,
titanium,
zirconium,
hafnium,
vanadium,
niobium,
tantalum,
molybdenum,
tungsten,
chromium,
nitrides thereof, and
carbides thereof.

12. The method as recited in Claim 8 wherein said creating
comprises coupling said resistive layer between a selected signal
pad and one of a plurality of ground pads.

13. The method as recited in Claim 8 wherein said creating
comprises creating said resistive layer between an entirety of a
pad portion of said conductive layer and said piezoelectric
substrate.

14. The method as recited in Claim 8 wherein said SAW device
comprises two signal pads and four ground pads and said resistive
layer is divided into portions that span said two signal pads and
said four ground pads.

15. A surface acoustic wave (SAW) filter, comprising:
2 a piezoelectric substrate;
3 a conductive layer located over said piezoelectric substrate
4 and forming a network of cooperating SAW devices; and
5 a resistive layer, interposing a portion of said conductive
6 layer and said piezoelectric substrate, that forms a return path
7 for static charge migrating from said piezoelectric substrate to
8 said conductive layer.

16. The SAW filter as recited in Claim 15 wherein said
2 piezoelectric substrate comprises one selected from the group
3 consisting of:

4 bismuth germanium oxide,
5 gallium arsenide,
6 lithium borate,
7 lithium niobate,
8 lithium tantalate,
9 langasite,
10 lead zirconium tantalate, and
11 quartz.

17. The SAW filter as recited in Claim 15 wherein said
conductive layer comprises one selected from the group consisting
of:

aluminum,
copper,
gold,
silver,
platinum, and
palladium.

18. The SAW filter as recited in Claim 15 wherein said
resistive layer comprises one selected from the group consisting
of:

silicon,
titanium,
zirconium,
hafnium,
vanadium,
niobium,
tantalum,
molybdenum,
tungsten,
chromium,

14 nitrides thereof, and
15 carbides thereof.

19. The SAW filter as recited in Claim 15 wherein said
2 resistive layer couples a selected signal pad to one of a plurality
3 of ground pads.

20. The SAW filter as recited in Claim 15 wherein said
2 resistive layer is interposed between an entirety of a pad portion
3 of said conductive layer and said piezoelectric substrate.

21. The SAW filter as recited in Claim 15 wherein said SAW
2 device comprises two signal pads and four ground pads and said
3 resistive layer is divided into portions that span said two signal
4 pads and said four ground pads.